



Commonwealth of Massachusetts  
Executive Office of Energy & Environmental Affairs

## Department of Environmental Protection

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December 30, 2014

Mr. Frank Sepiol  
Resource Control, Inc  
Fitchburg Westminster Landfill  
26 Patriot Place – Suite 300  
Foxborough, MA 02035

**RE: Westminster**  
Transmittal No.: W061954(A4)  
Application No.: CE-13-031  
Class: *OP*  
FMF No.: 133373  
**AIR QUALITY PLAN APPROVAL**

Dear Mr. Sepiol:

The Massachusetts Department of Environmental Protection (“MassDEP”), Bureau of Waste Prevention, has reviewed your Administrative Amendment Application to the Non-major Comprehensive Plan Tr. No. W061954(A). This Application concerns the proposed increase in hydrogen sulfide monitoring at the inlet and outlet of the hydrogen sulfide treatment system at the Fitchburg Westminster Landfill located at 101 Fitchburg Road (State Route 31) in Westminster, Massachusetts.

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 “Air Pollution Control,” regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-J, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP’s review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator (“Permittee”) must comply in order for the Facility to be operated in compliance with this Plan Approval.

## **1. DESCRIPTION OF FACILITY AND APPLICATION**

Resource Control, Inc ("the Permittee") operates the Fitchburg Westminster Landfill ("the Landfill") located in Westminster, MA. The Landfill consists of active and inactive portions. Landfill gas ("LFG") collected from active and inactive portions of the Landfill is directed to the Gas-to-Energy Facility consisting of reciprocating engines for energy recovery or to an open flare ("the Flare"). The installation of a candlestick flare is also authorized.

The Gas-to-Energy Facility ("Facility") is located on the property owned by the Permittee at the site of the Landfill within the Town of Westminster. The Facility is located adjacent to the Landfill access road, north of Section 1 of the Landfill and to the west by a State Forest. The Facility site consists of approximately 2.5 to 3.0 acres of usable land. The site is bordered to the north, east and west by woods, and the south by the Landfill. The site is entirely outside the footprint of waste disposal areas. The nearest residential dwellings are approximately 3,200 feet to the southwest and north of the site. The nearest on-site structures include a trailer office and maintenance garage to support operation of the Landfill. The Facility site is immediately adjacent to the existing 24-inch diameter header that collects LFG from the Landfill's LFG Collection System. The header is connected to the LFG Treatment System. Treated LFG then flows to the Engines or the Flare that are located on the site.

The LFG Treatment System consists of gas conditioning, a primary knockout box to remove condensate for the LFG monitoring and gas moving equipment, a vacuum blower/compressor to extract LFG from the LFG Collection System, a gas-to-gas heat exchanger followed by an air-cooled heat exchanger to cool LFG, a coalescing filter to remove particulate matter and condensate, a gas-to-gas heat exchanger to reheat the LFG and a sulfur removal system to remove elevated concentrations of hydrogen sulfide contained in the LFG. The sulfur removal system currently consists of four vessels operating in parallel that use Sulfa Treat media. An aftercooler is installed after the blower and before the gas flows to the four vessels. The LFG Treatment System applies a vacuum to interconnection points with the LFG Collection System to remove condensate and other contaminants in preparation for LFG combustion in the engines and directs excess LFG to the Flare or the candlestick flare (when installed) for combustion. In addition, the LFG Treatment System compresses and filters the gas and controls its temperature to meet the input conditions required by the engines.

Five engine/generator sets were authorized under Plan Approval Tr. No. 061954 for combusting the LFG and generating electricity. Three of those have been installed as of the issuance of this amended Plan Approval. LFG delivered by the LFG Treatment System is mixed with air, and then injected into the reciprocating internal combustion engines for combustion. The Engines are cooled by a water jacket system with heat expelled to the atmosphere through air-cooled radiators. Each engine produces shaft power to drive an electric generator that generates electricity for in-house use and for delivery to the local power grid. The Engines are spark-ignited turbo-charged lean-burn reciprocating internal combustion engines. Emissions from the Engines are emitted through individual exhaust stacks equipped with exhaust silencers.

The Flare (Plan Approval Tr. No. W033831) is a 2,000 scfm open flare for the treatment of LFG that is now a backup to the Engines. The Flare commenced operation in December 2003 to control emissions from portions of the operating landfill and the then new expansion. The Permittee is authorized to install a candlestick flare. The candlestick flare was approved in an amendment to Plan Approval Tr. No. W061954 and memorialized in a July 31, 2008 letter from Thomas P. Cusson, MassDEP to Robert Magnusson, Resource Control, Inc. As of the issuance of this amended Plan Approval, the candlestick flare has not been installed.

The burning of landfill gas in the generator sets and the Flare or the candlestick flare will result in emissions being released to the ambient air of particulate matter, sulfur dioxide, nitrogen oxides, carbon monoxide, volatile organic compounds and non-methane organic compounds. Hydrogen sulfide and Hazardous Air Pollutants generated by the landfill and not removed by the LFG Treatment System will be burned within the engine, the Flare or the candlestick flare.

Plan Approval, Tr. No. W061954(A3), amends Plan Approval Tr. No. W061954(A) by responding to the request for an Administrative Amendment to increase monitoring of hydrogen sulfide at the inlet and outlet of the LFG treatment system. This Plan Approval also consolidates into it, Plan Approval Tr. No. W033831 for the Flare and amendments made to Plan Approval Tr. No. W061954(A) in the following documents that were never written into the Plan Approval document:

- Memo from Tom Cusson to Bob Magnusson dated October 9, 2007
- Letter from Thomas P. Cusson to Robert Magnusson dated July 31, 2008
- Plan Approval Tr. No. X224236 issued January 8, 2009
- Plan Approval Tr. No. W061954 (A 2013-10-3) issued October 3, 2013

Plan Approval, Tr. No. W061954(A3), replaces, **in its entirety**, all previous Plan Approvals and other amendments to Plan Approvals Tr. No. W061954, Tr. No. W061954(A) and Tr. No. W033831.

This Plan Approval (Tr. No. W061954(A4)) corrects typographical errors in the Plan Approval Tr. No. W061954(A3). This Plan Approval replaces, **in its entirety**, Plan Approval Tr. No. W061954(A3).

## 2. EMISSION UNIT (EU) IDENTIFICATION

Each Emission Unit (EU) identified in Table 1 is subject to and regulated by this Plan Approval:

<b>Table 1</b>			
<b>EU</b>	<b>Description</b>	<b>Design Capacity</b>	<b>Pollution Control Device (PCD)</b>
1 - 5	Caterpillar Model No. 3520 SITA or equivalent reciprocating internal combustion engines	<ul style="list-style-type: none"> <li>Maximum heat rate per EU = 16.11 MMBtu/hr</li> <li>Maximum flow rate per EU = 531 scfm<sup>1</sup> of LFG at a methane content of 50% to generate 1600 kilowatts of power at full load</li> </ul>	Hydrogen Sulfide Control System
6	Callidus Technologies Inc. Model BTZ-PF-10 or equivalent open flare	<ul style="list-style-type: none"> <li>Maximum heat rate per EU = 66.8 MMBtu/hr</li> <li>120,000 cubic feet per hour of landfill gas<sup>2</sup></li> <li>2,000 scfm (turn down ration 20:1)</li> </ul>	Hydrogen Sulfide Control System
7	Candlestick flare	To be determined	To be determined

**Table 1 Key:**

EU# = Emission Unit Number  
LFG = Landfill gas  
MMBtu/hr = Million British Thermal Units per Hour  
% = per cent  
PCD = Pollution Control Device  
scfm = standard cubic feet per minute

**Table 1 Notes:**

<sup>1</sup> Combined maximum energy input for the Engines (EUs 1 through 5) is equivalent to 80.5 MMBtu/hr based on a maximum flow of 2,656 scfm of LFG at 50% methane content to generate 7.2 megawatts of power at full load. The maximum LFG flow will increase proportionally to a decrease in methane content below 50%.

<sup>2</sup> Based on a higher heating value not to exceed 1,000 British Thermal Units per standard cubic foot.

### 3. APPLICABLE REQUIREMENTS

#### A. OPERATIONAL, PRODUCTION and EMISSION LIMITS

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2 below:

Table 2					
EU	Operational / Production Limit	Air Contaminant	Emission Limit		
			lb/MMBtu	TPM	TPY
1 – 3 <sup>1</sup>	1. The primary fuel shall be LFG at a maximum rate of 16.11 MMBtu per hour per engine on a higher heating value basis (which is equivalent to 531 scfm at 50% methane). 2. The maximum heat input of LFG for the three engines combined shall not exceed 34,798 MMBtu per month and 423,371 MMBtu per 12-month period. 3. The maximum heat input of LFG shall not exceed 11,983 MMBtu per month per engine.	PM	0.061	0.40	4.8
		SO <sub>2</sub>	0.066	0.44	5.3
		NO <sub>x</sub>	0.166 and 0.60 grams per brake horsepower hour	1.10	13.2
		CO	0.830	5.50	66.0
		NMOC <sup>2</sup>	0.083	0.55	6.6
		VOC	0.083	0.55	6.6
		Opacity	Stack emissions shall not exceed 0% opacity (no visible emissions) except that for of up to five (5) minutes during startup opacity shall not exceed 20% opacity for a period or aggregate period of time in excess of two minutes and at no time exceed 40%.		
6 and 7	4. The primary fuel shall be LFG at a maximum rate of 2,000 scfm. 5. Propane or natural gas shall be used for a pilot. 6. LFG usage shall not exceed 120,000 cubic feet per hour, 46,693 MMBtu per month and 585,098 MMBtu per 12 month rolling total. <sup>3</sup>	PM	0.05		13.2
		SO <sub>2</sub>	0.066		18.9
		NO <sub>x</sub>	0.054		15.8
		CO	0.27		79
		VOC	0.03		9.3
		Opacity	The Flare and the candlestick flare shall be operated with no visible emissions, except that for periods not to exceed a total of five (5) minutes during any two (2) consecutive hours opacity shall not exceed 20% for a period or aggregate period of time in excess of two minutes and at no time exceed 40%. 40 CFR 60 Appendix A Method 22 shall be used to determine compliance with the visible emission limit.		

Table 2					
EU	Operational / Production Limit	Air Contaminant	Emission Limit		
			lb/MMBtu	TPM	TPY
1 – 7 <sup>4</sup>	7. After December 31, 2006, LFG may only be burned in the engines and the Flare and after July 31, 2008 LFG may only be burned in the candlestick flare after it has been treated to reduce H <sub>2</sub> S concentration levels in the LFG to at or below 500 ppmv at any time and 200 ppmv calendar month average.	PM			18.1
		SO <sub>2</sub>			19.5
		NO <sub>x</sub>			49.4
		CO			247.0
		NMOC			24.7
		VOC			24.7
Facility Wide		Any single HAP			Less than 10
		Total HAP			Less than 25

**Table 2 Key:**

Btu/scf = British Thermal Units per Standard Cubic Foot

CO = Carbon Monoxide

EU = Emission Unit Number

HAP = Hazardous Air Pollutant

H<sub>2</sub>S = Hydrogen Sulfide

lb/MMBtu = Pounds per Million British Thermal Units

LFG = Landfill Gas

MMBtu = Million British Thermal Units

NMOC = Non-Methane Organic Compounds

NO<sub>x</sub> = Nitrogen Oxides

PM = Total Particulate Matter

ppmv = parts per million by volume

% = percent

SCFM = Standard Cubic Feet per Minute

SO<sub>2</sub> = Sulfur Dioxide

TPM = tons per month

TPY = tons per consecutive 12-month period

VOC = Volatile Organic Compounds

**Table 2 Notes:**

<sup>1</sup> These Emission Limits apply to each engine.

<sup>2</sup> Each engine shall reduce NMOC emissions by 98 percent by weight, or reduce the stack NMOC concentration to 20 parts per million as hexane by volume, dry basis at 3 percent oxygen, or less.

<sup>3</sup> Based on a higher heating value of 557 Btu/scf LFG.

<sup>4</sup> These Emission Limits apply to the combined emissions of EUs 1 through 7.

**B. COMPLIANCE DEMONSTRATION**

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5 below:

<b>Table 3</b>	
<b>EU</b>	<b>Monitoring and Testing Requirements</b>
1 - 5	1. The Permittee shall continuously monitor each engine/generator set for run time and kW produced.
	2. The Permittee shall test the stack outlet oxygen levels at least once per week.
	3. The Permittee shall conduct weekly visual inspections of the engine's stack emissions. (The weekly visual inspection can be conducted by a person trained to observe opacity although not necessarily certified in EPA Method 9 observations. Please note that the absence of a certified EPA Method 9 reading when opacity is present will mean the Permittee cannot claim compliance during that event.)
6 and 7	4. The Permittee shall continuously monitor the Flare and the candlestick flare for the presence of a pilot flame.
	5. The Permittee shall visually inspect the Flare and the candlestick flare, when installed, in accordance with 40 CFR 60 Appendix A Method 22 within one week of startup. Thereafter, the Permittee shall perform brief visual inspections (less than one-half hour) on a weekly basis. (The weekly visual inspection can be conducted by a person trained to observe opacity although not necessarily certified in EPA Method 9 observations. Please note that the absence of a certified EPA Method 9 reading when opacity is present will mean the Permittee cannot claim compliance during that event.)
	6. In accordance with 310 CMR 7.04(4)(a), the Permittee shall inspect and maintain the Flare and the candlestick flare, when installed, in accordance with the manufacturer's recommendations and test for efficient operation at least once in each calendar year.
1 - 7	7. The Permittee shall monitor all operations to ensure sufficient information is available to comply with 310 CMR 7.12 Source Registration.
	8. The Permittee shall sample/test the heating value, in BTU/scf, of the landfill gas on a quarterly basis. It is acceptable to use a gas chromatograph to determine the heating value.
	9. The Permittee shall continuously monitor and record landfill gas flow using an LFG flow recorder.
	10. The Permittee shall test/monitor the H <sub>2</sub> S concentration (ppmv) at the inlet of the Sulfa Treat air pollution control system at least once per week. The Permittee shall test/monitor the H <sub>2</sub> S concentration (ppmv) at the outlet of the Sulfa Treat air pollution control system at least five days per week except during weeks with a legal holiday. On these weeks, the Permittee shall test/monitor the H <sub>2</sub> S concentration at the outlet of the Sulfa Treat air pollution control system at least four days per week. MassDEP will consider changing the frequency of the testing/monitoring for H <sub>2</sub> S based upon a petition supporting a change in frequency; a written MassDEP approval will be required to change the frequency of testing/monitoring for H <sub>2</sub> S concentrations.

<b>Table 3</b>	
<b>EU</b>	<b>Monitoring and Testing Requirements</b>
	11. The Permittee shall install monitoring equipment or emission monitoring systems for the purpose of documenting compliance with this Plan Approval. The Permittee shall install calibrate, maintain and operate monitoring equipment or emission monitoring systems in a manner sufficient to ensure continuous and accurate operations at all times.
	12. The Permittee shall construct the Facility to accommodate the emission testing requirements contained in 40 CFR Part 60 Appendix A.
	13. If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and Regulation 310 CMR 7.13.
	14. At least 30 days prior to emission testing, the Permittee shall submit to MassDEP for approval a stack emission pretest protocol.
	15. Within 45 days after emission testing, the Permittee shall submit to MassDEP a final stack emission test results report.
	16. The Permittee shall demonstrate to MassDEP the ability of the Facility to maintain emission rates at or below the levels stated in this Plan Approval in the future if deemed necessary.
	17. The Permittee shall perform emission testing to determine compliance with CO, NMOC, and NO <sub>x</sub> emission limits contained in Table 2 of this Plan Approval. All emission testing shall be completed within 90 days of the date that each engine commences LFG burning after startup at the facility.

**Table 3 Key:**

BTU/scf = British Thermal Units per standard cubic foot

CO = Carbon Monoxide

EU = Emission Unit Number

H<sub>2</sub>S = Hydrogen Sulfide

kW = Kilowatt

NMOC = Non-Methane Organic Compounds

NO<sub>x</sub> = Nitrogen Oxides

ppmv = Parts per Million by Volume



<b>Table 4</b>	
<b>EU</b>	<b>Record Keeping Requirements</b>
1 - 5	1. The Permittee shall maintain one operable oxygen analyzer on-site and a record shall be maintained of the stack outlet oxygen levels at least once per week on each engine.
6 and 7	2. In accordance with 310 CMR 7.04(4)(a), the Permittee shall record and post conspicuously on or near the Flare and the candlestick flare, when installed, the results of inspections, maintenance and testing and the date upon which it was performed.
1 - 7	3. The Permittee shall maintain an LFG flow recorder so that an on-site record of the total volume of LFG fired by the five (5) engine/generator sets and the Flare and the candlestick flare will be available by date and time period.
	4. The Permittee shall maintain records of the heat input of LFG (Btu) fired in EUs 1 through 5 and the Flare and the candlestick flare, for each month and for each twelve-month rolling period. These heat input records may be generated by gas chromatograph and/or field measurements.
	5. The Permittee shall prepare and maintain sufficient records to demonstrate compliance with all Operation, Production and Emission Limits set forth in this Plan Approval. All records shall be maintained up-to-date such that year-to-date information is readily available for MassDEP examination. Such records shall include, but are not limited to: <ul style="list-style-type: none"> <li>a. The initiation and completion dates for the proposed construction/alteration;</li> <li>b. Initial opacity inspection;</li> <li>c. Weekly visual inspection;</li> <li>d. Heating value of landfill gas, as monitored quarterly;</li> <li>e. Volume of LFG (in scf) burned in each engine and the Flare and the candlestick flare, on a monthly and twelve-month rolling basis; This record shall take into account the total volume of LFG fired by the five (5) EU's and the Flare and the candlestick flare and the individual EU set run time and amount of electricity produced.</li> <li>f. Monthly and twelve-month rolling total emissions of NO<sub>x</sub>, CO, NMOC, VOC, PM, HAP and SO<sub>2</sub> emitted.</li> </ul>
1 - 7	6. The Permittee shall maintain a copy of the Standard Operating Procedure (SOP) and Standard Maintenance Procedure (SMP) for the engines, the Flare, the PCD and the candlestick flare, when installed, in a readily available location for as long as this approval is valid. Updates or revisions to the SOP and SMP shall be submitted for MassDEP approval prior to initiating the modification(s).
	7. On a monthly basis, the Permittee shall compute emissions (in lb/month) by multiplying the measured LFG flow rate for the month (in scf) by the most recent measured higher heating value of the LFG (in Btu/scf) and then multiplying the appropriate pollutant emission rate indicated in Table 2 (in lb/MMBtu). To determine the 12-month rolling emissions (in tpy), the calculated monthly pollutant emissions (in lb/month) shall be added to the previous 11-months pollutant emissions (in lb/month) and then converted to tons by dividing by 2000.
	8. The Permittee shall maintain records of monitoring and testing as required by Table 3.

Table 4	
EU	Record Keeping Requirements
	9. The Permittee shall maintain a copy of this Plan Approval, underlying Application, the Application precedent to Plan Approval Tr. No. W061954 and the most up-to-date SOMP for the EUs approved herein on-site.
	10. The Permittee shall maintain a record of routine maintenance activities performed on the approved EUs, PCD and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.
	11. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EUs, PCD and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.
	12. The Permittee shall keep copies of the Source Registration/Emission Statement Forms submitted to MassDEP as required by 310 CMR 7.12(1)(d).
	13. The Permittee shall maintain all operating and monitoring records, including emission test reports, for the life of the Facility; the five most recent years of data/records shall be maintained on-site.
	14. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.
	15. The Permittee shall keep records of emissions testing conducted to demonstrate compliance with the applicable requirements in Table 2 in accordance with 310 CMR 7.13(1)(d).
	16. Pursuant to the authority granted to MassDEP at 310 CMR 7.02(7), the Permittee shall maintain a copy of this Plan Approval, and any subsequent modifications of this Plan Approval, on-site for as long as the Plan Approval is valid.
Facility Wide	17. The Permittee shall maintain documentation indicating that HAP emissions are less than 10 tons of any single HAP and less than 25 tons total HAPs per twelve month rolling period.
	18. The Permittee shall calculate the Facility emission rates for HAPs using the equations for calculating controlled emissions in Section 2.4 of the U.S. EPA's Compilation of Air Pollution Emission Factors, Volume 1: Stationary Point and Area Sources, AP-42, Fifth Edition, Office of Air Quality Planning and Standards, Research Triangle Park, NC, November 1998 ( <a href="http://www.epa.gov/ttn/chief/ap42">http://www.epa.gov/ttn/chief/ap42</a> ). The default values for landfill gas constituents provide in Table 2.4-1 and the typical control efficiencies of landfill gas flares as provided in Table 2.4-3 shall be used in calculating the controlled emissions. The latest edition (6 <sup>th</sup> , 7 <sup>th</sup> , etc.) of the above referenced document shall be used when available for calculation of HAPs.

Table 4	
EU	Record Keeping Requirements
	<p>19. The Permittee shall maintain adequate records on-site to demonstrate compliance status with all operational, production, and emission limits contained in Table 2 above. Records shall also include the actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve-month period (current month plus prior eleven months). These records shall be compiled no later than the 15<sup>th</sup> day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at <a href="http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping">http://www.mass.gov/eea/agencies/massdep/air/approvals/limited-emissions-record-keeping-and-reporting.html#WorkbookforReportingOn-SiteRecordKeeping</a>.</p>

**Table 4 Key:**

BTU = British Thermal Units  
BTU/scf = British Thermal Units per standard cubic foot  
EPA = Environmental Protection Agency  
EU = Emission Unit Number  
CO = Carbon Monoxide  
H<sub>2</sub>S = Hydrogen Sulfide  
HAPs = Hazardous Air Pollutants  
kW = Kilowatts  
lb = Pound  
lb/MMBtu = Pounds per Million British Thermal Units  
lb/month = pounds per month  
LFG = Landfill Gas  
NMOC = Non-Methane Organic Compounds  
NO<sub>x</sub> = Nitrogen Oxides  
PCD = Pollution Control Device  
PM = Particulate Matter  
Ppmv = parts per million by volume  
scf = Standard Cubic Foot  
SO<sub>2</sub> = Sulfur Dioxide  
TPY = Tons per Year  
USEPA = United States Environmental Protection Agency  
VOC = Volatile Organic Compounds

Table 5	
EU	Reporting Requirements
	<p>1. The Permittee shall notify the Central Regional Office of MassDEP, BWP Permit Chief by telephone: (508-767-2845), email: CERO.Air@massmail.state.ma.us, or fax: (508-792-7621), as soon as possible, but no later than one (1) business day after discovery of an exceedance(s) of Table 2 requirements. A written report shall be submitted to Permit Chief at MassDEP within three (3) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).</p>

<b>Table 5</b>	
<b>EU</b>	<b>Reporting Requirements</b>
	2. The Permittee shall report annually to MassDEP, in accordance with 310 CMR 7.12, all information as required by the Source Registration/Emission Statement Form. The Permittee shall note therein any minor changes (under 310 CMR 7.02(2)(e), 7.03, 7.26, etc.), which did not require Plan Approval.
	3. Upon MassDEP's request, the Permittee shall submit any records required by the applicable requirements identified in this Plan Approval, or the emissions of any air contaminant from the facility, to MassDEP within 30 days of the request by MassDEP, or within a longer time period if approved in writing by MassDEP. Said response shall be transmitted on paper, on computer disk, or electronically at the discretion of MassDEP
	4. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a "Responsible Official" as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).

**Table 5 Key:**

BWP = Bureau of Waste Prevention

EU = Emission Unit Number

#### **4. SPECIAL TERMS AND CONDITIONS**

The Permittee is subject to, and shall comply with, the following special terms and conditions:

- A. The Permittee shall comply with the Special Terms and Conditions as contained in Table 6 below:

<b>Table 6</b>	
<b>EU</b>	<b>Special Terms and Conditions</b>
4 and 5	1. EUs 4 and 5 (or any one of EUs 1 through 3 installed after January 1, 2009) shall meet the then current emission limits recognized by MassDEP to be BACT as may be identified in MassDEP regulation, MassDEP written policy or most current plan approval for that size and type engine at the time of installation. In no case shall the emission limits be greater than those noted within this Plan Approval.
1 - 5	2. The Permittee shall ensure that noise levels from EUs 1 through 5 during routine operations, including start ups and shut downs, shall not exceed MassDEP Noise Policy 90-001 and in no case shall cause a condition of air pollution as defined in Regulation 310 CMR 7.01 and 7.10.
	3. EUs 1 through 5 shall each be equipped with an exhaust silencer that ensures noise from the Engines will not cause or contribute to a condition of air pollution.

<b>Table 6</b>	
<b>EU</b>	<b>Special Terms and Conditions</b>
	4. The building housing EUs 1 through 5 shall consist of an appropriate foundation, four walls and a roof. The walls and roof shall be made of solid material such as wood, metal, brick or concrete.
	5. All access doors to the building housing EUs 1 through 5 on the access and exit passageways shall be kept closed at all times that they are not in use.
	6. The walls, roof, doors and windows and any ventilation openings for the building housing EUs 1 through 5 shall be acoustically treated as necessary to ensure compliance with 310 CMR 7.10 and MassDEP's noise policy 90-01.
6 and 7	7. The Flare or the candlestick flare, when installed, will be used as a back up to the engine system to destroy LFG.
	8. The candlestick flare, when installed, shall be operated in lieu of the Flare during low flow conditions of excess landfill gas. The candlestick flare shall be located adjacent to the Flare and a valve shall separate flow from one to the other. The Flare and the candlestick flare shall not be operated at the same time.
	9. The Flare and the candlestick flare shall conform to the requirements of 40 CFR 60.18.
	10. At all times LFG is vented to the Flare and the candlestick flare, the Flare and the candlestick flare shall be operated.
	11. The Flare and the candlestick flare shall be operated with a flame present at all times. A thermocouple, or other equivalent device, and data recorder shall be installed to document the presence of the flame pilot and must clearly indicate date and time.
	12. The MassDEP reserves the right to require a new Plan Approval should the monitored LFG flow rate vary substantially from the proposed 100 – 2,000 scfm.
1 - 7	13. Each emission unit shall be operated in a manner consistent with the manufacturer's specified working procedures at all times the collected LFG is routed to the emission unit.
	14. Within 30 months after the first annual report in which the NMOC emissions rate equals or exceeds the 50 megagram NMOC per year threshold as specified in 40 CFR Subpart WWW Standards of Performance for Municipal Solid Waste Landfills, the Permittee shall submit to the MassDEP appropriate air pollution control plan application for the installation and operation of a landfill gas recovery project or an enclosed flare. After commencement of operation of either the landfill gas recovery project or an enclosed flare, then the Flare or the candlestick flare, when installed, approved herein shall only be operated as a back-up or secondary landfill gas emission control device.

Table 6	
EU	Special Terms and Conditions
	<p>15. The hydrogen sulfide control system shall be manufactured by Sulfa Treat, model No. ST-410HP-10'-22' – 88,000 pound or equivalent and shall be designed to handle at least 2,660 SCFM of LFG with a pressure drop across the unit between 0.7 and 1.7 psig. The unit shall be a non-regenerative system consisting of iron oxide coated ceramic, 4 to 16 mesh and will have a removal efficiency necessary to reduce outlet hydrogen sulfide treatment to a maximum of 500 ppmv at any time and 200 ppmv calendar month average in landfill gas at 50% methane. The media in the adsorber will be replaced when the exit levels of hydrogen sulfide reaches 200 ppmv calendar month average. The contaminated regenerative media will be disposed at the Fitchburg Westminster Landfill.</p> <p>16. The Sulfa Treat hydrogen sulfide control system, or equivalent, shall reduce LFG H<sub>2</sub>S concentration to a maximum of 500 ppmv at any time and 200 ppmv calendar month average in LFG at 50% methane prior to combustion in the Engines, the Flare or the candlestick flare.</p> <p>17. The Sulfa Treat hydrogen sulfide control system may be removed and/or retired in place provided untreated LFG gas samples for 12 consecutive months are 200 ppmv or less.</p> <p>18. Should there be any differences between Plan Application Tr. Nos. W061954, W061954(A), W061954(A 2013-10-03), X224236, W061954(A3) or W033831 or the Memo from Tom Cusson to Bob Magnusson dated October 9, 2007 or the Letter from Thomas P. Cusson to Robert Magnusson dated July 31, 2008 and this Plan Approval, this Plan Approval shall govern. In addition, the Permittee shall operate the Facility in accordance with existing permit/approvals and modifications, unless specifically stated otherwise herein.</p>
	<p>19. This Plan Approval replaces, <b>in its entirety</b>, all previous Plan Approvals and other amendments to Plan Approval Tr. Nos. W061954, W061954(A), W061954(A3) and W033831 except that all plan application materials appended to Plan Approvals Tr. Nos. W061954, W061954(A), W061954(A3) and W033831 become part of this Plan Approval.</p>

**Table 6 Key:**

BACT = Best Available Control Equipment

EU = Emission Unit H<sub>2</sub>S = Hydrogen Sulfide

LFG = Landfill Gas

NMOC = Non-Methane Organic Compounds

% = percent

psig = Pounds per Square Inch Gauge

ppmv = Parts per Million by Volume

scfm = Standard Cubic Feet per Minute

- B. The Permittee shall install and use an exhaust stack, as required in Table 7, on each of the Emission Units that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including but not limited to rain protection devices known as “shanty caps” and “egg beaters.” The Permittee

shall install and utilize exhaust stacks with the following parameters, as contained in Table 7 below, for the Emission Units that are regulated by this Plan Approval:

<b>Table 7</b>				
<b>EU</b>	<b>Stack Height Above Ground</b>	<b>Stack Inside Exit Dimensions</b>	<b>Stack Gas Exit Velocity Range</b>	<b>Stack Gas Exit Temperature Range</b>
1 - 5	A minimum of 19 Feet above grade and a minimum 10 feet above the roof of the engine building	16 inches	178 feet per second	960°F
6	37 feet above grade	10 inches	N/A	N/A
7	To be determined	To be determined	To be determined	To be determined

**Table 7 Key:**

°F = Degrees Fahrenheit

EU = Emission Unit Number

## **5. GENERAL CONDITIONS**

The Permittee is subject to, and shall comply with, the following general conditions:

- A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).
- B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.
- C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.
- D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.

- E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.
- F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.
- G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.
- H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.
- I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.
- J. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

## **6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT**

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain "Fail-Safe Provisions," which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.



## **7. APPEAL PROCESS**

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts  
Department of Environmental Protection  
P.O. Box 4062  
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Should you have any questions concerning this Plan Approval, please contact Stephen Majkut by telephone at 508-767-2773, e-mail at [stephen.majkut@state.ma.us](mailto:stephen.majkut@state.ma.us) or in writing at the letterhead address.

This final document copy is being provided to you electronically by the  
Department of Environmental Protection. A signed copy of this document  
is on file at the DEP office listed on the letterhead.

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Roseanna E. Stanley  
Permit Chief  
Bureau of Waste Prevention